

DRAFT

Petition No. 1560
The Connecticut Light and Power Company d/b/a Eversource Energy
Norwalk Bridge Transmission Relocation Project
Norwalk

Staff Report
May 19, 2023

Introduction

On February 17, 2023, the Connecticut Siting Council (Council) received a petition from The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for the Norwalk Bridge Transmission Relocation Project within existing Connecticut Department of Transportation (CDOT) railroad right-of-way (ROW), within state and local roads and across the Norwalk River in the City of Norwalk. (Petition or Project).

The Project consists of the relocation and rebuild of two existing 115-kilovolt (kV) electric transmission lines from railroad catenaries and existing structures within the CDOT ROW¹ to an underground configuration within roads and across the Norwalk River for approximately .66 miles between existing Structure 522WN north of Monroe Street and Structure 536WN north of Van Zant Street.

On February 17, 2023, in compliance with Regulations of Connecticut State Agencies (RCSA) §16-50j-40, Eversource provided notice of the proposed Project to the City of Norwalk (City) and abutting property owners.

Also on February 17, 2023, the Council sent correspondence to the City stating that the Council has received the Petition and invited the City to contact the Council with any questions or comments by March 19, 2023. On March 14, 2023, the City Mayor submitted a letter in support of the Project.

In addition to full participation in the Connecticut Environmental Policy Act process for the concurrent CDOT bridge replacement project, more fully described below, on March 22, 2023, the Council on Environmental Quality (CEQ) submitted comments on the Eversource Project.² Under RCSA §16-50j-40, neither Eversource nor the Council is required to provide notice to the state agencies listed in CGS §16-50j(g) when a petition for a declaratory ruling for modifications to an *existing facility* is submitted to the Council.

Under CGS §16-50x, the Council retains exclusive jurisdiction over the existing electric transmission line facility site. Under RCSA §16-50j-2a(29), “site” means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located. The Council cannot delegate its statutory authority to any other entity and it is not required to abide by comments from state agencies.³

The Council submitted interrogatories to Eversource on March 17, 2023. Eversource submitted responses to the interrogatories on April 17, 2023, one of which included photographic documentation representative of the existing transmission facilities to be removed and the existing bridge with transmission facilities currently attached.

¹ The ROW is owned by CDOT and used by Metro-North Railroad (MNR) and Amtrak for transporting passengers and by CSX for transporting freight.

² https://portal.ct.gov/-/media/CSC/3_Petitions-medialibrary/Petitions_MediaLibrary/MediaPetitionNos1501-1600/PE1560/ProceduralCorrespondence/PE1560_CEQcomments_s.pdf; On February 24, 2023, CEQ requested an extension of time to submit comments. On February 27, 2023, the Council granted an extension of the public comment period until April 3, 2023. The extension applied to comments from any interested person.

³ *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

The Norwalk Harbor Management Commission (NHMC) and Norwalk Shellfish Commission submitted a joint request for a public hearing on April 3, 2023. At a public meeting held on April 13, 2023, the Council denied the request for a public hearing.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. On April 13, 2023, pursuant to CGS §4-176(e), the Council set the date by which to render a decision on the Petition as no later than August 16, 2023, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

The Council submitted a second set of interrogatories to Eversource on May 1, 2023. Eversource submitted responses to the interrogatories on May 15, 2023.

The Project is proposed to permanently relocate a portion of two existing Eversource 115-kV electric transmission facilities to facilitate CDOT's construction and future maintenance of a new Norwalk River Railroad Bridge (Walk Bridge). The planned design is a vertical lift bridge that opens to allow the passage of vessels on the Norwalk River, which is not conducive to collocation of electric transmission line facilities. CDOT commenced construction activities for the new Walk Bridge on May 12, 2023.⁴

Notice and Community Outreach

In 2015, CDOT notified Eversource that its electric transmission lines conflict with CDOT's Walk Bridge replacement plan. Beginning in October 2016, Eversource initiated meetings with City officials regarding the need for its Project. The City requested that the relocation be underground; new overhead structure installation in South Norwalk (SoNo) be avoided; the permanent footprint on any undeveloped parcels Eversource utilizes during construction be minimized in case such parcels are developed in the future; and impacts to Veteran's Memorial Park be minimized. Accordingly, Eversource, CDOT and the City agreed to an acceptable route in April 2017.

Subsequently, CDOT notified Eversource of plans to replace the Fort Point Street Bridge, a railroad bridge that crosses Fort Point Street east of the Walk Bridge. The Fort Point Street Bridge replacement conflicts with reconnecting the relocated transmission lines to the ROW at the end of Goldstein Place on the east side of the Norwalk River. CDOT requested Eversource to reconnect with the ROW farther to the east, past the Fort Point Street Bridge, so that CDOT work on this bridge could take place outside of the area of energized transmission lines. Thus, Eversource redesigned this portion of the route to accommodate CDOT's request by re-joining the ROW just east of the bridge along Fort Point Street.

On November 13, 2018, Eversource held an Open House at Norwalk City Hall to provide information to the public regarding the Project. Twenty-two (22) members of the community attended the open house. A primary topic of discussion was potential disruptions to businesses during construction.

Eversource appeared before the NHMC on May 24, 2017, September 27, 2017, and November 16, 2022 to present information and answer questions specific to the proposed horizontal directional drill (HDD) under the Norwalk River. NHMC expressed concerns about sufficient clearance from the pilings on the north visitor's dock at Veteran's Memorial Park. In response, Eversource redesigned the HDD to ensure a cable depth of 8 feet below the bottom of the existing dock pilings and over 11 feet radially from the pilings.

In March 2019, the City requested that Eversource investigate collocating its transmission lines with CDOT's communications cables within a common trench north of the Stroffolino Bridge. The Stroffolino Bridge, locally known as the Washington Street Bridge, carries State Route 136 across the Norwalk River and is located

⁴ <https://www.walkbridgect.com/news/walk-bridge-construction-news-may-5-12/>

approximately 600 feet south of the Walk Bridge.⁵ The City and CDOT agreed to such a route; however, upon further analysis, CDOT determined it is not a viable option based on cost, schedule impact and environmental considerations for crossing the river between the bridges.

In September 2020, the City requested that Eversource redesign the route so that splice vaults on the east side of the Norwalk River be located within Fort Point Street (Route 136) and not within Veteran's Memorial Park. In March 2021, Eversource, the City and CDOT agreed to a final proposed route to place the splice vaults within Route 136, a design that relocates the cables farther to the north as opposed to beneath the docks at the park. Future replacement of pilings and performance of dock work within a specified corridor would be coordinated with Eversource after completion of construction.

On November 22, 2022, the Norwalk Common Council expressed support for the proposed route/design for the Project.

Beginning in Fall 2021, Eversource conducted outreach to property owners along the Project route and addressed concerns, including, but not limited to, the following:

1. At the Norwalk Police Department, Eversource will minimize its construction footprint within the Visitor Parking Lot and locate two new transition structures as close to the railroad as possible;
2. At SoNo Gardens, a condominium located between Monroe Street and Madison Street on the west side of the Norwalk River, Eversource will install Structure 524WN to the eastern edge of the property to minimize impacts to green space and parking; and
3. At 25 Van Zant Street, where the underground transmission lines cut across a parking lot on the east bank of the Norwalk River to reach the railroad corridor, Eversource will restore any disturbed areas.

All abutting property owners were notified of the Project and provided information on how to obtain additional information, as well as how to submit comments to the Council. Eversource will continue to perform door to door outreach to abutting property owners during construction.

Existing Facility Site

The CDOT ROW runs in an approximately southwest-northeast direction through the City. It varies in width between 100 feet and 140 feet and extends through commercial and residential areas. The CDOT ROW is used by Metro-North Railroad (MNR), Amtrak and CSX and crosses the Norwalk River via the Walk Bridge. The Walk Bridge is approximately 564 feet long and was constructed in 1896. It carries four railroad tracks. Currently, Eversource has two existing 115-kV overhead transmission lines (1028 and 1146 Lines) located within the CDOT ROW. The Lines are supported by approximately 235-foot tall lattice structures at both ends of the Walk Bridge.

The 1028 Line is located on transmission structures within the north side of the ROW. The 1146 Line is located on top of bonnets attached to railroad catenary structures within the south side of the ROW. The original catenaries were installed in 1912. The bonnet attachments for electrical transmission were originally constructed in 1967 to 1968. Monopole structures for electrical transmission were added in approximately 1992. Eversource's License Agreement for use of the existing CDOT ROW grants Eversource rights to use railroad property/right-of-way to install, maintain and operate transmission facilities for its operations. Under the License Agreement, Eversource agrees to make changes in its transmission facilities to avoid interference with changes in railroad facilities provided the changes comply with the National Electrical Safety Code (NESC).

⁵ Similar to the new Walk Bridge design, the Stroffolino Bridge is a vertical lift bridge that allows for passage of vessels on the Norwalk River, which is not conducive to collocation of electric transmission line facilities.

CDOT determined the Walk Bridge must be replaced due to deterioration; vulnerability to storm surges; high wind events; and operational failures. Consistent with the License Agreement, Eversource's existing transmission facilities along the CDOT ROW must be removed from the Walk Bridge to accommodate CDOT's replacement of the bridge. It is not feasible to attach the transmission lines to the new bridge design. The permanent relocation of Eversource's transmission lines is necessary.

Project Development

Eversource initially reviewed several possible route options presented by CDOT, located both north and south of the existing Walk Bridge, consisting of underground, overhead and hybrid (overhead and underground combination) configurations. The route selection criteria included, but was not limited to, the following:

- a) Target the shortest and straightest route to disconnect the existing transmission facilities within the CDOT ROW on the west side of the river and reconnect to facilities within the CDOT ROW on the east side of the river;
- b) Minimize cost and community impacts;
- c) Reduce construction constraints;
- d) Avoid direct impacts to coastal resources;
- e) Avoid direct and visual impacts to historic districts and structures;
- f) Minimize impacts to residential and commercial properties;
- g) Avoid conflicts with CDOT's Walk Bridge reconstruction activities; and
- h) Minimize encumbrance to future shoreline development.

Potential routes explored include, but are not limited to, the following:

Proposed Route – The proposed route would begin at the CDOT ROW north of Monroe Street and continue overhead to transition structures at the Norwalk Police Department, then continue underground to the east along Elizabeth Street and crossing Water Street before HDD under the Norwalk River to reach Route 136, and continue underground along Route 136 to reach transition structures south of the ROW and east of Route 136. The route would transition to overhead to re-connect to the 1028 and 1146 Lines to the east. The proposed route would cost approximately \$46.3M.

Overhead Hybrid Route – This hybrid route would include the underground facilities for the proposed Project, but with an overhead Norwalk River crossing. Two overhead crossing routes were considered, located to the north and south of the Stroffolino Bridge, each of which would require the installation of four approximately 160-foot tall transition structures over the navigation channel and the Stroffolino Bridge to meet federal clearance requirements. The hybrid route would cost approximately \$43.5M. While this would be more economic than the proposed route (i.e. cost \$2.8M less)⁶, it was rejected by Eversource due to visual impacts, real estate acquisition, and City opposition.

⁶ Cost estimates for the overhead hybrid route are subject to greater variability than projected costs for the proposed route. Thus, there is a higher risk that actual costs for the hybrid route might substantially exceed the estimated costs.

Collocation Route 1 – This collocation route would begin at the CDOT ROW and transition to an underground duct bank at the Police Department, then extend southeast, crossing South Main Street and into Elizabeth Street before turning north onto Water Street and then northeast, crossing Washington Street, into the North Water Street Park and Maritime Aquarium IMAX theater properties. The route would then continue east crossing the Norwalk River by cut and cover trenching or micro-tunneling to the eastern shore then turn south down Goldstein Place and continue northeast, along Route 136 to 25 Van Zant Street where the circuits would transition back to overhead and continue within the CDOT ROW. This collocation route would cost approximately \$56.8M, which is a cost delta of approximately \$10.5M relative to the proposed Project route. Eversource rejected this route due to construction conflicts with CDOT, substantial subsurface utility congestion within North Water Street that would have shifted the location of the cables and duct into the sidewalk or onto private property, substantial traffic interruptions and higher costs than the proposed route.

Collocation Route 2 – This collocation route is similar to Collocation Route 1 with two exceptions. First, the river crossing would be shifted slightly farther to the south, which would require Eversource to use its own dedicated crossing independent from CDOT. Secondly, the eastern shore of the Norwalk River route would continue to the east underground, crossing Goldstein Place before turning north into the CDOT ROW. The route would continue east within the CDOT ROW, cross Route 136 to 25 Van Zant Street, where the circuits would transition back to overhead and continue within the CDOT ROW. This collocation route would cost approximately \$54.1M, which is a cost delta of approximately \$7.8M relative to the proposed Project route. Eversource rejected this route due to constructability issues along North Water Street and the need for additional property.

See Figure 3 - Map for Route Comparison.

Proposed Project

The Project is proposed to permanently re-route the existing electric transmission facilities from the Walk Bridge prior to its demolition and replacement. The re-routed facility site includes portions of private property at 15 Madison Street and 25 Van Zant Street, CDOT property on Water Street and Route 136, and City property at the Norwalk Police Department, Elizabeth Street, and the Norwalk River (south of Stroffolino Bridge).

The Project entails four new transition structures; two new dead-end monopole structures; three existing modified monopole structures; one existing monopole structure removal; and four existing modified bonnet structures to accommodate the connections to the existing transmission lines on the CDOT ROW on both sides of the Norwalk River. Additionally, approximately 7,000 circuit-feet of cross-linked polyethylene (XLPE) cable and All-Dielectric Self-Supporting (ADSS) fiber optic cables within concrete duct banks, as well as two splice vaults and two pull-through vaults would be installed to facilitate the underground route between the two pairs of transition structures. A portion of this underground route would pass under the Norwalk River via HDD.

The Project is not part of the ISO New England, Inc. (ISO-NE) Regional System Plan Project List or Asset Condition List. The Project is included on Eversource's Local System Plan (LSP) as Norwalk-CDOT Replace Structures at Norwalk River Crossing. The LSP is presented annually at a public ISO-NE Transmission Owner Planning Advisory Committee meeting each October and includes an update on the status of the Project. Eversource presented the Project at the annual meeting in 2018 and received no feedback or comment from ISO-NE at that time.

Convert 1028 and 1146 Overhead Lines to Underground

The 1028 Line originates at Darien Substation in Darien and terminates at Fitch Substation in Norwalk. It is a 115-kV line constructed on monopole structures with 1590-kcmil "Lapwing" conductor in the CDOT ROW in approximately 1992. The 1146 Line originates at SoNo Substation in South Norwalk and terminates at

Sherwood Substation in Westport. It is a 115-kV line constructed on bonnets attached to the railroad catenaries with 1272-kcmil “Bittern” conductor in the CDOT ROW in approximately 1967-1968.

Specifically, the work includes, but is not limited to, the following:

- a) Modify existing 95-foot tall Structure 522WN;
- b) Install new 128-foot tall galvanized steel dead-end monopole Structure 524WN
- c) Install new 123-foot tall galvanized steel Transition Structure 524ES;
- d) Extend 1028 Line across the railroad corridor in an easterly direction as an overhead connection from Structure 524WN to Transition Structure 524ES;
- e) Modify existing 75-foot tall Catenary Bonnet 522;
- f) Modify existing 72-foot tall Catenary Bonnet 523;
- g) Install new 123-foot tall galvanized steel Transition Structure 523EN;
- h) Install optical ground wire (OPGW) to reach transition structure and convert to ADSS for underground ducts for 1028 Line;
- i) Install ADSS for underground ducts for 1146 Line; and
- j) Extend 1046 Line to the northeast as an overhead connection from Catenary Bonnet 522 to Transition Structure 523EN.

Underground Route from CDOT ROW to 90 Water Street

A double-circuit 5000 kcmil XLPE cable configuration that connects to Transition Structures 523EN and 524ES would continue east along Elizabeth Street and cross Water Street to reach the HDD entry/exit area located at CDOT-owned property at 90 Water Street. CDOT agreed to grant Eversource a permanent easement at this property for the installation, access and maintenance of the re-routed Eversource electric transmission facilities.

Specifically, the work includes, but is not limited to, the following:

- a) Install one XLPE cable per phase (or six total because of two circuits) within the duct banks;
- b) Install ADSS within the duct banks; and
- c) Install two splice vaults on the 90 Water Street property.

See Figure 6 – Duct Bank Cross Section.

HDD from 90 Water Street to Route 136 east of Norwalk River

HDD is a steerable trenchless method of installation of underground pipes, conduits and lines in a shallow arc along a bore path using a surface-launched drilling rig. HDD is used where open trench excavation is not practical such as under rivers, highways, or areas of congested development.

The HDD installation consists of two bore holes approximately 3 to 4 feet in diameter with a center to center spacing of approximately 20 feet. Send and receive areas would be located on opposite sides of the Norwalk River. The sending area would have typical dimensions of approximately 150 feet by 100 feet. The receive area would have typical dimensions of 750 feet by 75 feet. The HDD installation would have an entry and exit angle of approximately 15 degrees. Depending upon the soil characteristics, a casing may be necessary temporarily at both the entrance and exit of the HDD to prevent the bore from collapsing. Such casing would be removed after installation of the high density polyethylene (HDPE) pipes. After a bore hole has been drilled and reamed to its final diameter, four each 10-inch diameter HDPE pipes and four each 2 to 4-inch diameter HDPE pipes would be pulled together through each bore hole.

See Figure 7 - HDD Under Norwalk River Cable Cross Section.

Such HDPE pipes must be assembled using a pipe string⁷ process before the pulls. The pipe string process would require the use of Veteran's Memorial Park as a staging/laydown area. Vegetation in the northwestern corner of Veteran's Memorial Park would be cleared for this process. Pipe string work would be performed from the southeastern corner of Veteran's Memorial Park to the northeastern corner and then westward to connect with the northern HDD exit.

Underground 1028 and 1146 Lines from Route 136 to CDOT ROW

From the HDD entries/exits adjacent to the Stroffolino Bridge, the 1028 and 1146 Lines would continue underground to one equipment vault each (per circuit) and then convert to a double-circuit underground configuration to continue along Route 136. The double-circuit configuration would separate into two single-circuit configurations as it approaches the CDOT ROW.

Specifically, the work includes, but is not limited to, the following:

- a) Install one XLPE cable per phase (or six total because of two circuits) within the duct banks;
- b) Install ADSS within the duct banks;
- c) Install two pull-through vaults (one per circuit) within Route 136 adjacent to the northwestern corner of Veteran's Memorial Park; and
- d) Convert the two single-circuit underground configurations (northeast of the two vaults) to a double-circuit underground configuration to continue along Route 136 to approach the CDOT ROW.

Convert Underground #1028 and #1146 Lines to Overhead to Re-Connect at CDOT ROW

New Transition Structures 534ES and 535WS would be installed immediately south of the CDOT ROW and east of Route 136 to facilitate the transition from underground to overhead. An overhead connection from Transition Structure 534S to new monopole Structure 535WN would cross the railroad tracks and allow for the re-connection of the 1028 Line. Existing overhead structure 535WN would be removed. Existing overhead Structure 536WN would be modified to facilitate the connection. An overhead connection from Transition Structure 535WS to Catenary Bonnet 536 would allow for the re-connection of the 1146 Line. Existing Catenary Bonnets 535 and 536 would be modified to facilitate the connection.

Specifically, the work includes, but is not limited to, the following:

- a) Clear existing vegetation south of the CDOT ROW and east of Route 136;
- b) Install galvanized steel Transition Structures 534ES and 535WS, approximately 113 and 118 feet tall, respectively south of the CDOT ROW;
- c) Remove existing transmission Structure 535 WN, approximately 100 feet tall;
- d) Install replacement galvanized steel dead-end monopole Structure 535WN, approximately 124 feet tall;
- e) Install overhead connection of 1028 Line from Transition Structure 534ES to 535WN;
- f) Modify existing Catenary Bonnet 535;
- g) Modify existing Catenary Bonnet 536;
- h) Install overhead connection from Transition Structure 535WS to Catenary Bonnet 536;
- i) Install OPGW to reach transition structure and convert to ADSS for underground ducts for 1028 Line; and
- j) Install ADSS for underground ducts for 1146 Line.

⁷ Pipe string is the process of preparing HDPE sections of pipe for installation in the HDD bore holes. HDPE pipes are delivered in sections and must be joined/fused together into two continuous lengths (one per line) to be pulled back through the HDD bore hole.

Cost

The total estimated cost of the project is approximately \$46.3M. **See Figure 4 – Cost Table.** Of this total, 50% or approximately \$23.15M would be reimbursed by CDOT per a July 22, 2021 Cost Sharing Agreement, and the remaining approximately \$23.15M would be borne by Eversource customers.⁸ Under the Cost Sharing Agreement, cost overruns would be subject to the same 50/50 split between CDOT and Eversource customers.

Project Construction

Eversource would utilize the following as staging/laydown areas: City-owned property at Veteran's Memorial Park; Eversource-owned property at 319 Wilson Avenue and Norwalk Harbor Substation at 3 Longshore Avenue; CDOT-owned property at 90 Water Street; and private property at 85 Dr. Martin Luther King Drive. Eversource and CDOT have coordinated the joint use of the 90 Water Street staging/laydown area for the respective projects. **See Figure 1 – Map with DOT and Eversource Project.** Appropriate E&S controls would be installed, inspected and maintained around the staging areas until completion of construction in accordance with Project permitting and the April 2022 Eversource Best Management Practices (BMPs).

Eversource would obtain a CDOT Encroachment Permit to cross Route 136.

Eversource would utilize City streets or parking lots to access most of the re-routed facility site. No new access roads would be required. At the 15 Main Street property, the existing paved parking lot would be used for construction per an agreement with the landowner. At the 25 Van Zant Street property, the existing paved parking area would be utilized to the extent feasible to remove vegetation in the CDOT ROW and modify existing Catenary Bonnets 535 and 536. However, additional access may be required off the pavement. Per an agreement with the landowner, Eversource would restore any disturbed areas.

Construction areas would be isolated, as necessary, by establishing erosion and sedimentation (E&S) controls in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and Eversource BMPs. Typical E&S control measures include, but are not limited to, straw bales, filter fabric, filter baskets and/or silt bags. Temporary E&S control measures would be left in place until the areas disturbed by the construction activities are permanently stabilized. Permanent stabilization would consist of the application of pavement for areas within existing road ROWs or otherwise currently paved areas. In Veteran's Memorial Park, where a temporary laydown/staging area is proposed, Eversource would re-seed turf to restore disturbed soils. After final stabilization is achieved, all temporary E&S controls would be removed and properly disposed.

A project-specific Stormwater Pollution Control Plan (SWPCP) would be developed for registration under a DEEP Stormwater Permit. The Stormwater Permit requires a qualified inspector to inspect the work areas at least once per week and within 24-hours after a rain event that meets certain permit criteria. Environmental monitoring for the Project construction would be conducted by qualified Eversource staff and/or contractors at the outset of construction and in accordance with Project permits and approvals.

The Project generally consists of three major construction components:

- a) Construction of 115-kV overhead line segments to facilitate the exit and re-connection to the railroad ROW;
- b) Construction of the 115-kV underground line segment; and
- c) HDD under the Norwalk River.

Eversource would construct the Project in stages, with some overlapping work activities subject to site-specific conditions, outage availabilities (for Eversource and MNR), and regulatory approvals.

⁸ Customers of Eversource means electrical service customers of Eversource and located within Connecticut.

The HDD portion of the Project would be expected to take approximately 5 months total or approximately 10 weeks per line. Eversource plans to conduct the HDD portion during the winter months.

After the underground conduits have been tested successfully, the transmission cables, fiber optic cables, and ground continuity conductors would be installed, spliced, and terminated. Transmission cable reels would be delivered by special tractor trailer trucks to each termination structure location. The cables would be pulled into the conduits using a truck-mounted winch and special cable handling equipment. A single cable would be pulled into place within each conduit (except for the spare conduit). XLPE cable splicing is a complex procedure that would require approximately five to seven days to complete the splices in each splice vault.

Upon completion of work, any disturbed areas would be stabilized temporarily to minimize the potential for soil erosion or sediment releases and inspected until stabilization is complete and E&S controls are removed.

Work areas that are currently paved would be re-paved as part of the restoration process. Other restoration activities include re-seeding or sodding of turf, re-planting trees and landscaping, and relocating the Veteran's Memorial Park entrance consistent with the City's master plan.

Project-related traffic effects along state and City roads would generally be expected to be temporary and highly localized to the roads where the underground conduit installation work would be performed and in the vicinity of the CDOT ROW, contractor yards, and staging area(s). Additionally, the construction activities occurring on these roads would not affect rail service.

During construction, vehicles and equipment would enter and exit designated work areas from various public roads. Eversource would work closely with CDOT and the City to develop a detailed traffic management plan to minimize disruptions to vehicular traffic.

When construction is complete and the Project is energized, CDOT will remove the de-energized transmission facilities from its ROW in accordance with CDOT's demolition plan for the Walk Bridge replacement. The de-energized transmission facilities and structural steel from the bridge replacement would be recycled by CDOT. Removal costs and salvage value would be shared among CDOT and Eversource in accordance with the License Agreement.

Environmental Effects and Mitigation Measures

Minimal vegetation removal would be required due to the urban nature of portions of the re-routed facility site and the use of existing streets and developed areas. Select vegetation would be removed in the Norwalk Police Department parking lot, near the entrance to Veteran's Memorial Park, and within the CDOT ROW at 25 Van Zant Street. Additionally, tree trimming and vegetation removal would be required at the CDOT-owned 90 Water Street property. At 25 Van Zant Street and 90 Water Street, tree removal activities coincide with CDOT project activities. Disturbed areas would be restored to pre-existing conditions, or in accordance with the municipal tree ordinance.

No inland wetlands or vernal pools are located proximate to the re-routed facility site. Tidal wetland resources are located along the immediate shorelines of the Norwalk River where the proposed HDD crossing would traverse at depths approximately 40 feet beneath these resources. No land-based work would be conducted within tidal wetlands.

The vaults and portions of the transmission lines would be located in areas within the 100-year Federal Emergency Management Agency-designated flood zone. All Project facilities would be installed underground within these areas and would not affect the flood zone. Additionally, the equipment and structures within the 100-year flood zone would be designed for protection from water infiltration.

There are no DEEP-designated Aquifer Protection Areas within the re-routed facility site.

The HDD pilot hole diameters will be between 8 and 12 inches. The drilling fluid is composed of clay and water. During drilling activities, soil cuttings are separated from the fluid and the fluid is reclaimed/reused by the drilling contractor. The proposed HDD crossing meets the United States Army Corps of Engineers (USACE) minimum factor of safety for inadvertent release of drilling fluid. Eversource would conduct work in accordance with its BMPs. Provisions are included for the proper storage, secondary containment, and handling of diesel fuel, motor oil, grease and other lubricants, to protect water quality.

A portion of the re-routed facility site is within a DEEP NDDDB area. By letter dated June 24, 2021, DEEP indicated that it does not expect any negative impacts to state-listed species and that the determination is valid for two years. Eversource would submit a new NDDDB request for the Project per the requirements of the DEEP General Permit.

Eversource consulted with the U.S. Fish & Wildlife Service's Information, Planning and Consultation (IPaC) service regarding federally-listed species that may be present within the re-routed facility site. The IPaC report identified four species potentially occurring in the region: monarch butterfly, a candidate for federal listing; the northern long-eared bat (NLEB), a federally-listed and state-listed Endangered Species; the red knot, a federally-listed Threatened Species; and the roseate tern, a federally-listed Endangered Species. There are no known NLEB maternity roost trees within 150 feet of the re-routed facility site, and the nearest NLEB hibernaculum is located approximately 15 miles west-southwest in the Town of Greenwich. A biological assessment generated through IPaC determined that the re-routed facility site is dominated by existing developed and disturbed areas, and the majority of these areas are comprised of impervious surfaces with a portion consisting of maintained lawn and landscape trees, which do not provide habitat for any of the identified species. Thus, the proposed Project is not expected to affect these species.

The biological assessment also identified the potential for two raptor species, peregrine falcon and osprey, to occur in proximity to the re-routed facility site. No conflicts with peregrines are expected; however, osprey commonly build nests in tall structures, including electric transmission structures. If an active nest is identified on a structure to be removed or modified, work on the structure would be delayed until the young birds have fledged. If an inactive nest is identified on any structure, it would be removed to reduce risks for outages.

Norwalk River Benthic Macroinvertebrate and Submerged Aquatic Vegetation Surveys (Benthic Study) were conducted for the Project on June 19, 2018. The Benthic Study consisted of submerged aquatic vegetation (SAV) surveys within the 525-foot linear footprint of the HDD path and a 100-foot buffer on either side. The Benthic Study concluded that the HDD path is subject to environmental stress, dominated by pollution-tolerant species and in a degraded condition. The subsurface conditions within the HDD path consist of primarily sand and gravel. Weathered rock is located beneath the HDD path and would not constitute an obstruction.

The State Historic Preservation Office (SHPO) noted that there is potential to identify intact archaeological deposits and recommended that an archaeological monitor be present during construction unless it could be demonstrated via soil probes or cores that no further archaeological work is warranted because the soil has been compromised. The Benthic Study concluded that the river is in a degraded condition. Specifically, it has been dredged repeatedly. The soil data from the Benthic Study demonstrates that the soil has been compromised and unlikely to contain cultural resources. Thus, no additional borings are required to address cultural/archaeological concerns within the river where HDD is planned.

The work pad on the east side of the Norwalk River is located directly south of what was historically known as Fort Point Island, a contact period Native American fortification. Eversource notified the Mohegan, Mashantucket-Pequot and Wampanoag Tribal Historic Preservation Offices on April 24, 2023. Archaeological deposits are also possible within the streets on the west side of the Norwalk River due to the presence of the Hanford Place Historic District located north and south of Elizabeth Street.

The Walk Bridge is listed on the National Register of Historic Places (NRHP). The MNR received a determination of eligibility, but it is not currently listed on the NRHP. A Phase 1A Cultural Resources Assessment (Phase 1A) of the re-routed facility site determined that it contains the following features listed on the NRHP: Hanford Place Historic District; South Main & Washington Street Historic District; former Norwalk City Hall; and Norwalk River Railroad Bridge. SHPO recommends a Historic Building Protection Plan be developed for Haviland and Elizabeth Streets within the Hanford Place Historic District. Preparation and implementation of a Historic Building Protection Plan would cost approximately \$225,000.

CDOT developed a Historic Building Protection Plan for the Walk Bridge replacement project. SHPO approved the recommended mitigation and protection measures in the plan. The Hanford Place Historic District, located north and south of Elizabeth Street, is common to the CDOT and Eversource projects. **See Figure 2 – NRHP-listed sites proximate to CDOT and Eversource projects.** It is part of CDOT's Historic Building Protection Plan. The Lodges Historic District, which is located south of Monroe Street, is not part of CDOT's Historic Building Protection Plan nor is it referenced in any SHPO correspondence related to the Eversource Project.

A portion of the re-routed facility site includes a publicly accessible recreational area known as Veteran's Memorial Park. Vegetative clearing is proposed in the northwestern and northeastern corners of the park to facilitate the installation of the HDD equipment vaults on adjacent Route 136 and to accommodate the pipe string along the northern and eastern perimeter of the park. Eversource would limit any impacts to the park to the extent possible using temporary construction matting.

The re-routed facility site is not located within the policy area of the Long Island Sound Blue Plan (Blue Plan). No Ecologically Significant Areas identified by the Blue Plan are located within the re-routed facility site. However, Significant Human Use Areas, identified as waterfront historic districts, anchorage areas, marinas, designated navigational channels, and transmission facilities, are proximate to the re-routed facility site.

The relocation of portions of the 1028 and 1146 Lines would require an increase in structure heights to meet NESC and MNR clearance requirements within the CDOT ROW. Existing structures for the lines (including catenary bonnets and monopoles) range from 72 to 100 feet above ground level. The replacement structures (i.e. monopoles and transition structures) would range from 113 feet to 128 feet above ground level, with increases in height ranging from 24 feet to 51 feet.

The Project would result in a reduction of structures and catenary bonnets within the portion of the CDOT ROW where the existing transmission line facilities would be removed. While the new above-ground structures would be taller than existing structures, the new structures would generally be of similar character to existing structures within the CDOT ROW. Thus, the Project is not expected to have an adverse visual impact on the commercial and residential areas located proximate to the CDOT ROW.

Public Safety

The NESC is the authoritative code for ensuring the continued practical safeguarding of persons and utility facilities during the installation, operation and maintenance of electric power and communications utility systems, including substations, overhead lines and underground lines. The Project would require taller transmission line structures to meet NESC standards⁹, including, but not limited to, conductor clearance requirements. Additionally, the Project will meet MNR vertical and horizontal clearance requirements of 15-feet from transmission structures to comply with Occupational, Safety and Health Administration working clearance requirements.

⁹ The Project would comply with 2023 NESC, which became effective February 1, 2023.

NESC standards for underground structures, including, but not limited to docks, require a minimum 12-inch separation from other underground structures. Eversource provides 24-inch separation to allow for construction tolerances. USACE designates the minimum vertical clearance above mean high water for any waterway designated as a Federal Navigational Channel (FNC). Eversource anticipates a vertical clearance above mean high water of 80 feet for maximum height vessel passage, which meets the NESC clearance requirements.

USACE also designates the channel bottom elevation for the Norwalk River. Eversource would maintain a minimum clearance of approximately 26 feet below the channel bottom elevation. The Norwalk River FNC at the HDD crossing is maintained at 12 feet deep and 150 feet wide. USACE requires a minimum 48-inch separation from the top of the cables to the bottom of the authorized dredge channel depth. Eversource would install the cables at depths of 30-50 feet beneath the authorized dredge channel depth. If the FNC were realigned, widened or deepened by USACE after the Project is constructed, Eversource does not believe there would be any conflicts.

USACE Sections 10 and 408 permits, as well as a DEEP Structures and Dredging Permit, are required for the HDD crossing.

HDD construction would not have any impact on river navigation. An Eversource vessel will be on the Norwalk River during the HDD operation to monitor conditions and communicate with other vessels. The cables will be installed inside conduit approximately 20 feet below the dredging limits. There is no risk from ship anchors at this depth.

There would be no permanent changes to existing sound levels after completion of the Project. Noise associated with construction activities is exempt from DEEP Noise Control Regulations. Notwithstanding, any construction-related noise would be short-term and localized in the vicinity of work sites. Eversource plans to conduct its construction activities during daylight hours to the extent feasible. In some cases, night work may be necessary due to MNR track outage availability. Eversource would work with residents in areas where cumulative night construction impacts may occur.

Notice to the Federal Aviation Administration would not be required for any of the proposed structures.

Electric fields (EF) are produced whenever voltage is applied to electrical conductors and equipment. Electric fields are typically measured in units of kilovolts/meter (kV/m). As the weight of scientific evidence indicates that exposure to electric fields, beyond levels traditionally established for safety, does not cause adverse health effects, and as safety concerns for electric fields are sufficiently addressed by adherence to the NESC, as amended, health concerns regarding Electric and Magnetic Fields (EMF) focus on MF rather than EF. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has established a guideline of 4.2 kV/m.

The Project route contains an existing transmission line that emits magnetic fields (MF). In the United States, no state or federal exposure standards for 60-Hertz MF based on demonstrated health effects have been established, nor are there any such standards established worldwide. However, the ICNIRP has established a level of 2,000 milliGauss (mG), based on extrapolation from scientific experimentation, and the International Committee on Electromagnetic Safety (ICES) has calculated a guideline of 9,040 mG for exposure to workers and the general public, and recognized in the Council's *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut*.

Eversource reviewed MF levels associated with the Project. Pre- and post-construction MF levels¹⁰ are presented in the table below:

¹⁰ MF levels are based on average annual loads.

Summary of Fields	Magnetic Field Calculations (mG)		
	25 feet N	Max	25 feet S
Trench	0.6	36.6	1.7
Vault	21.3	128.4	24.9
HDD	8.2	14.6	8.7

All MF values would be below the ICNIRP exposure guidelines of 2,000 mG.

The cables would not be a source of EF due to the shielding effects of the cable, sheath, conduit, and the ground. In areas where overhead transmission lines would remain, changes to EF would be negligible due to the modifications associated with the Project.

Construction Schedule

Construction is expected to begin in November 2023 with a projected in-service date of August 2025. Normal work hours would be Monday through Saturday from 7:00 a.m.¹¹ to 7:00 p.m. Occasional Sunday work between the hours of 9:00 a.m. and 6:00 p.m. are anticipated.

Certain activities would involve work being performed during non-typical hours and, in some cases, on a continuous 24-hour basis. For example, the HDD pipe pullback installation would require continuous/uninterrupted operations. Non-typical hours might also be necessary due to circumstances including, but not limited to, cable installations; cable splicing; performing work during a Connecticut Valley Electric Exchange or MNR approved outage; switching, testing and commissioning; and to mitigate interruptions to businesses or residential properties.

Eversource is coordinating with the City regarding seasonal restrictions in Veteran's Memorial Park to avoid disturbances during the active summer season. Generally, construction-related activities within the park are planned to occur from early October through late March. Should activities be necessary outside this time period, Eversource would coordinate with the City to establish mutually acceptable times.

Eversource and CDOT construction timelines will overlap at the Fort Point Street Bridge, where design efforts and construction sequences were coordinated.

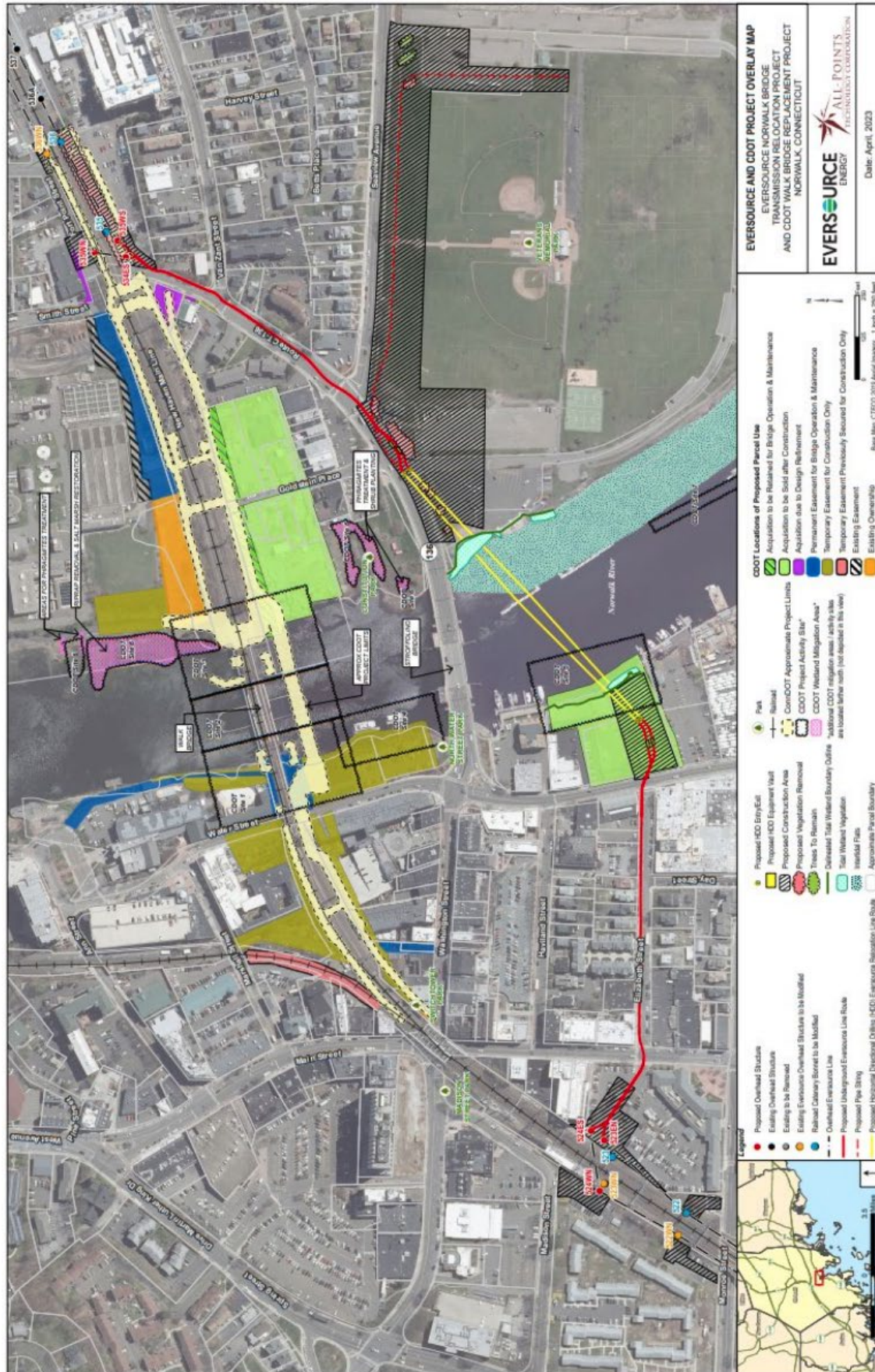
Conclusion

If approved, staff recommends the following conditions:

- 1) Approval of any project changes be delegated to Council staff;
- 2) Submission of an updated DEEP NDDB determination that is associated with the General Permit prior to the commencement of construction;
- 3) An environmental monitor shall oversee construction activities in sensitive resource areas consistent with Petition page C-11;
- 4) Cooperation with USACE regarding any schedule developed for future development of the FNC; and
- 5) Notification to the Council and provision of a plan for the relocation or deepening of the cable system if USACE proposes to deepen the FNC.

¹¹ During the winter, snow plowing and de-icing may be necessary prior to the 7:00 a.m. start of the work day.

Figure 1 - Map with DOT and Eversource Project



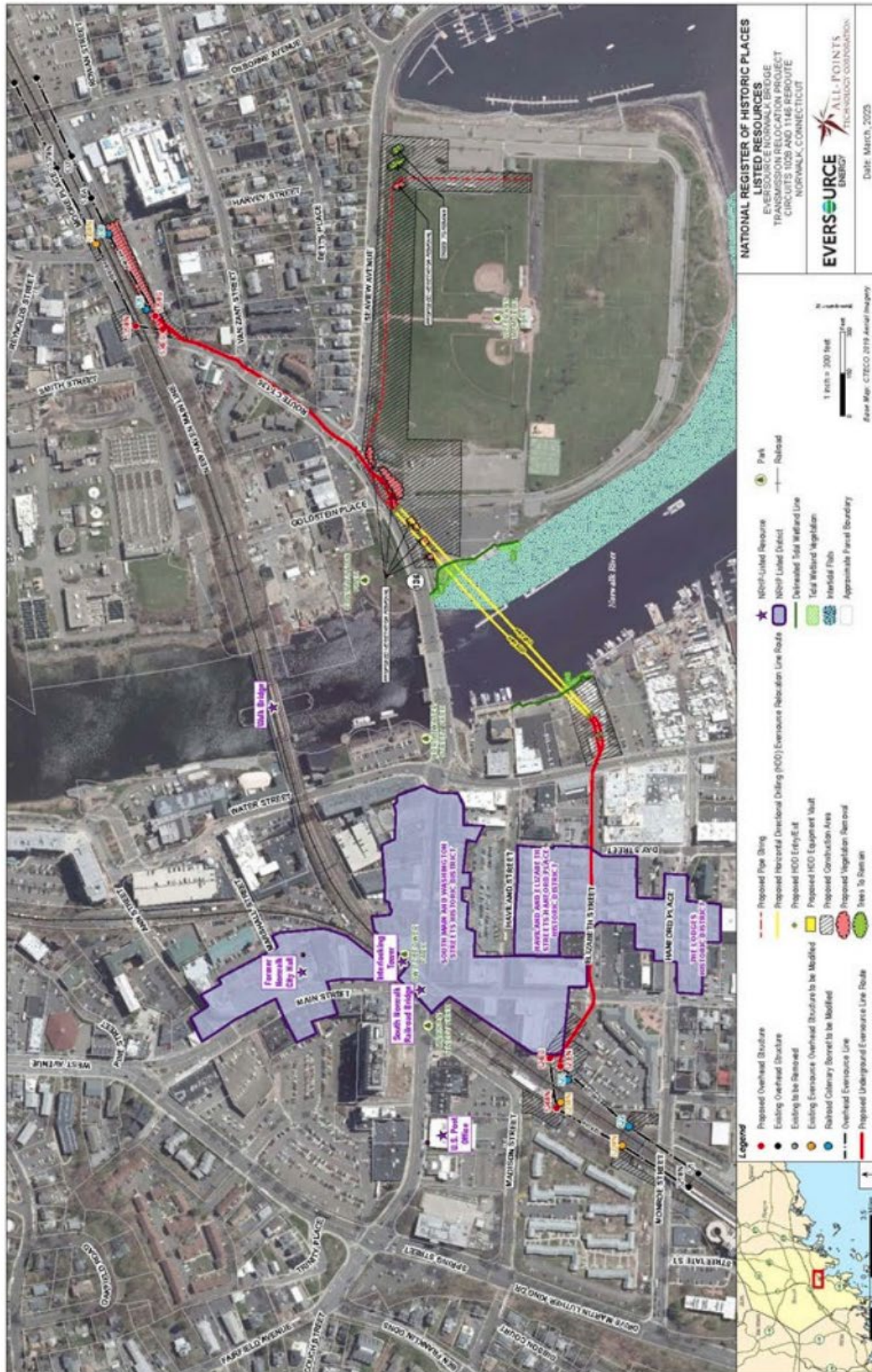


Figure 3 – Map for Route Comparison

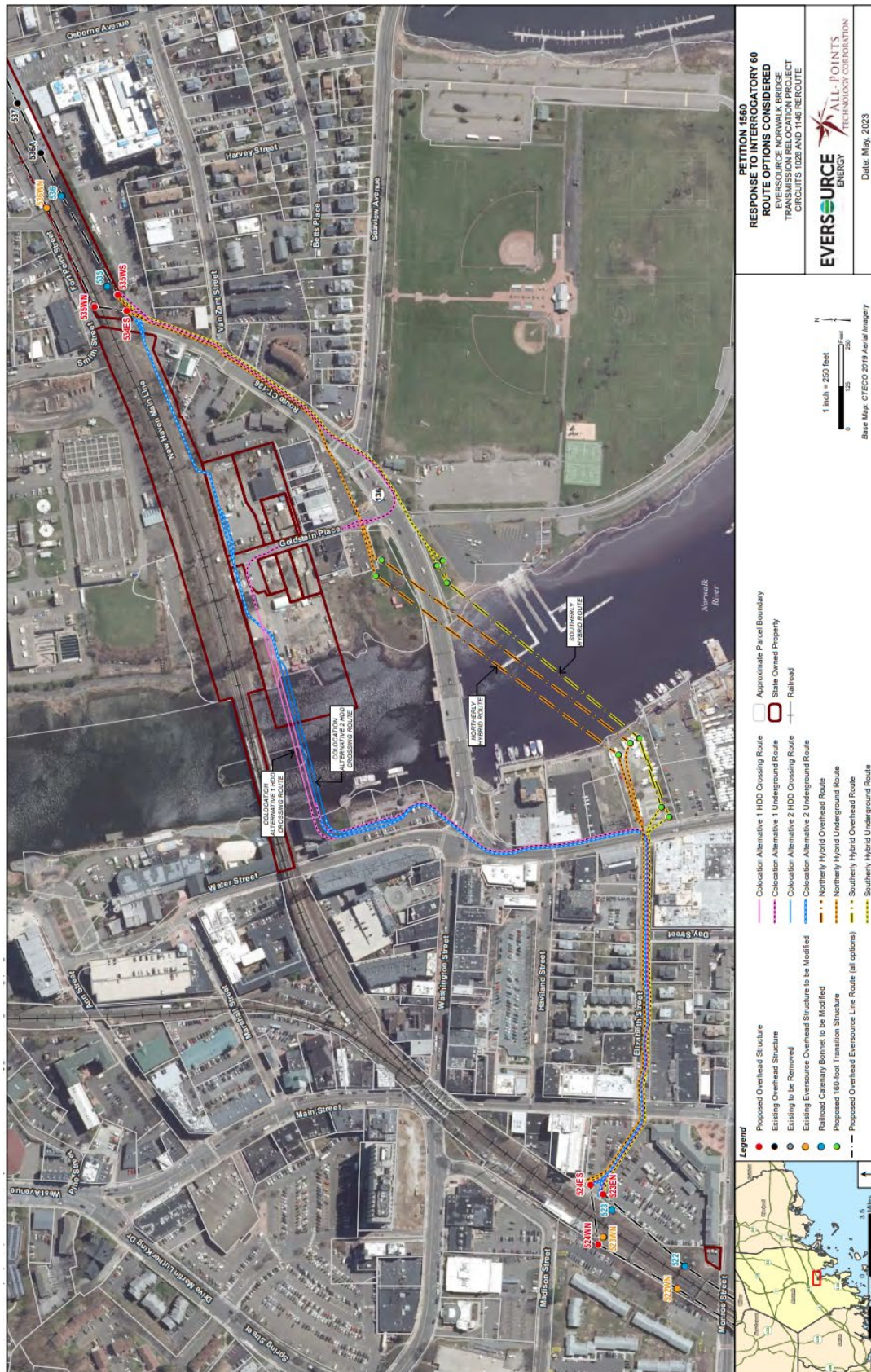


Figure 4 – Cost Table

Route Options (\$ x 1,000)	LENGTH	OVERHEAD CONSTRUCTION		UNDERGROUND CONSTRUCTION		HDD RIVER CROSSING	CUT & COVER RIVER CROSSING	REAL PROPERTY ACQUISITION COSTS		REMOVALS	RESTORATION	TOTAL COST ESTIMATE	PROPOSED ROUTE PROJECT COST	Reasons for Rejection
	(mi)	A	B	C	D	E	F	G	H	I	J	K		
Proposed Route (Est. -25% / +25%) (70% Engineering Design)	0.6	\$9,828	\$18,258	\$13,488	-	\$2,494	\$1,820	\$432	\$46,319	\$46,319	-	-		
OH Hybrid Route (Est. -25% / +50%) (10% Engineering Design)	0.6	\$20,690	\$14,672	-	-	\$5,569	\$1,820	\$761	\$43,511	\$46,319	(\$2,808)	- Substantial Visual Impacts - City Opposition - Real Estate Acquisition Challenges		
Collocation Alt. 1 (Est. -25% / +50%) (10% Engineering Design)	0.8	\$9,316	\$29,272	-	\$12,852	\$2,607	\$1,820	\$930	\$56,797	\$46,319	\$10,478	- Additional UG construction for longer route through heavily congested City streets requiring additional private property easements - Increased coordination with CDOT / impacts to CDOT Bridge construction schedule		
Collocation Alt. 2 (Est. -25% / +50%) (10% Engineering Design)	0.7	\$9,362	\$26,179	-	\$13,220	\$2,622	\$1,820	\$935	\$54,137	\$46,319	\$7,818	- Additional UG construction for longer route through heavily congested City streets requiring additional private property easements - Still requires coordination with CDOT / impacts to CDOT Bridge construction schedule - Additional coordination with railroad operations & CDOT / Metro-North for track outages to support adjacent UG construction (East of River)		

Figure 5 - CDOT ROW Profile

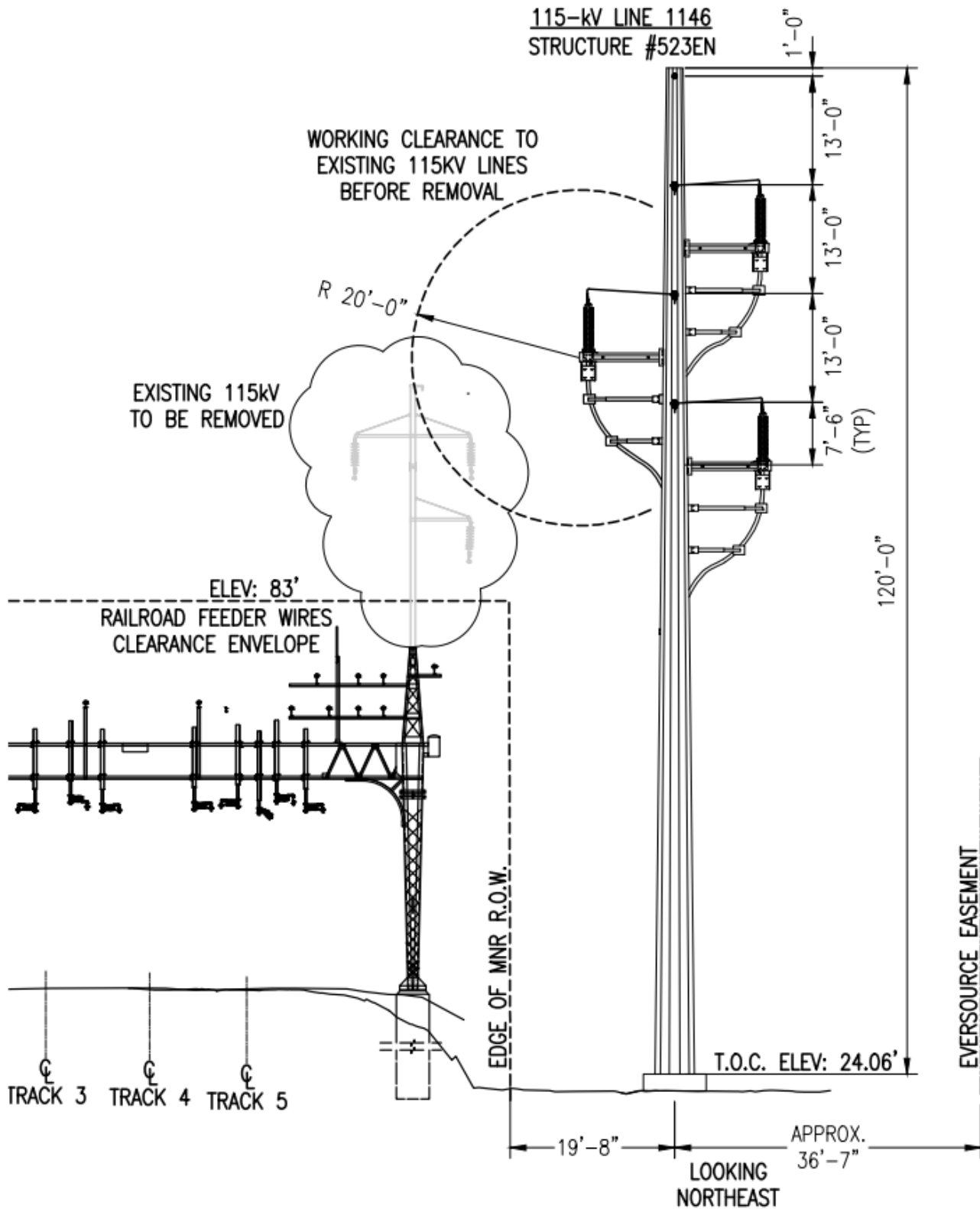


Figure 6 – Duct Bank Cross Section

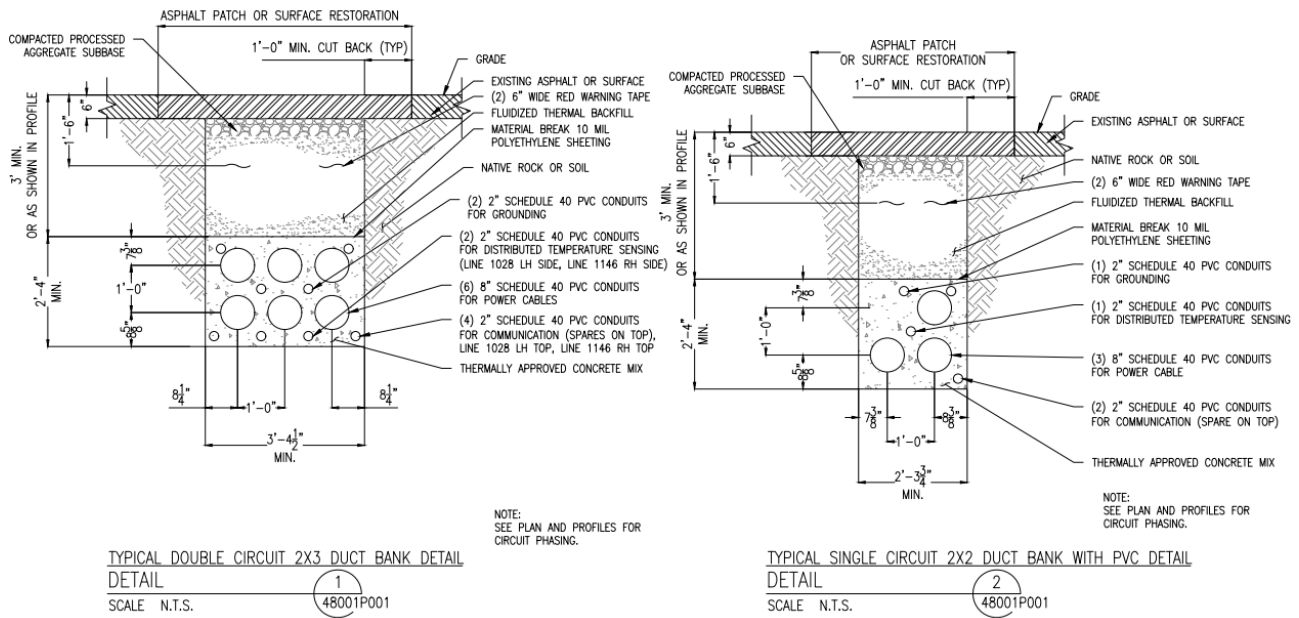


Figure 7 - HDD Under Norwalk River Cable Cross Section

